

## CLAIMS

What is claimed is:

1. A system for providing area surveillance, comprising:  
at least one video imaging device configured for transmitting a video data stream over an AC power-line;  
a video display interface device; and  
means for receiving said video data stream from said AC power-line and controlling presentation of said received video data stream as passed to said video display interface device for storage or presentation to a user.
2. A system as recited in claim 1, further comprising means for dynamically allocating bandwidth over said AC power-line for said video imaging devices.
3. A system as recited in claim 1, wherein said dynamically allocated bandwidth is responsive to the bandwidth needs of additional video imaging devices, or other devices, communicating over said AC power line.
4. A system as recited in claim 3, wherein said dynamic allocation of bandwidth is performed in response to predetermined and event-driven settings.
5. A system as recited in claim 4, wherein said dynamic allocation of

bandwidth modulates the amount of bandwidth allocated to said video imaging device in response to a detected motion event.

6. A system as recited in claim 4, wherein said dynamic allocation of bandwidth comprises modulating bandwidth related configuration of said video imaging device.

7. A system as recited in claim 5, wherein said bandwidth related configuration of said video imaging device comprises at least one video control parameter selected from the group consisting essentially of color depth, image size, image resolution, and framing rate.

8. A system as recited in claim 1, further comprising a mass-storage device configured for storing said video data streams received from said at least one video imaging device.

9. A system as recited in claim 1, wherein said video display interface comprises a computer server.

10. A system as recited in claim 9, wherein said computer server comprises:  
a computer operating as a video server configured for communicating video data streams within a selectable bandwidth allocation over said AC power line with video

imaging devices; and

a remote communication link within said computer server which is configured for communicating video signals received from at least one said video imaging device to a location beyond the communication range of said AC power line.

11. A system as recited in claim 1, further comprising a user interface configured for capturing user commands for controlling the collection and display of said video streams.

12. A system for providing area surveillance, comprising:

at least one video imaging device connected to an AC power-line and configured for generating a video data stream of an area under surveillance;

a computer server connected to said AC power-line and configured for receiving said video data stream and communicating said video data stream to a display device according to user preferences;

a data storage device coupled to said computer server configured for storing portions of said video data stream; and

a user interface within said computer server configured for capturing user preferences for controlling the collection and display of said video data streams.

13. A system as recited in claim 12, wherein said computer server is configured to dynamically allocate bandwidth for video imaging devices in response to

predetermined or event-driven bandwidth settings.

14. A system as recited in claim 13, wherein said dynamic allocation of bandwidth modulates the amount of bandwidth allocated to said video imaging device in response to a detected motion event.

15. A system as recited in claim 13, wherein said dynamic allocation of bandwidth comprises modulating settings within said video imaging device which determine the bandwidth of the video data stream being output.

16. A system as recited in claim 15, wherein at least one setting of said video imaging device being modulated is selected from the group consisting essentially of color depth, image size, image resolution, and framing rate.

17. A system as recited in claim 12, wherein said user interface comprises an interface to a wireless remote control device.

18. A system as recited in claim 12, wherein said user interface comprises wired connections to user input selectors.

19. A system as recited in claim 12, wherein said user interface comprises a connection through a remote communications link configured for communicating with a

remote electronic device interacting with a user at a remote location.

20. A system as recited in claim 19, further comprising means of authenticating a user communicating through said remote communications link as said user interface.

21. A system as recited in claim 20, wherein said means of authenticating comprises decrypting communications with said remote electronic device in response to the entry of a proper identifier.

22. A system as recited in claim 19, wherein said remote communications link is configured for communicating video signals received from said video imaging device to a location outside the extent of communication over said AC power-line.

23. A system as recited in claim 12, wherein said video data streams comprise encoded video signals.

24. A system as recited in claim 23, wherein said video signals are encoded according to a moving pictures expert group (MPEG) format.

25. An apparatus for imaging an area under video surveillance, comprising:  
an image sensor;

a communications interface configured for communicating over an AC power-line with a server, wherein dynamic bandwidth allocations are received from said server, and video signals from said image sensor subject to said dynamic bandwidth allocation are transmitted to said server.

26. A system as recited in claim 25, wherein said dynamically allocated bandwidth is responsive to predetermined or event-driven bandwidth needs.

27. A system as recited in claim 26, wherein said dynamic allocation of bandwidth modulates the amount of bandwidth allocated to said video imaging device in response to a detected motion event.

28. A system as recited in claim 26:  
wherein said dynamic allocation of bandwidth comprises modulating video control settings within said video imaging device which determine the bandwidth of the video data stream being output;

wherein at least one said video control setting is selected from the group consisting essentially of color depth, image size, image resolution, and framing rate.

29. An apparatus as recited in claim 25, further comprising a means for encoding said video signals into a format according to a Moving Picture Experts Group (MPEG) video format.

30. An apparatus as recited in claim 25, further comprising a means for sensing motion and communicating said motion over said AC power-line to said server.

31. An apparatus as recited in claim 30, wherein said means for sensing motion comprises a motion detector.

32. An apparatus as recited in claim 30, wherein said means for sensing motion comprises extracting motion vectors when encoding said video signals into a format according to a Moving Picture Experts Group (MPEG) video format.

33. An apparatus as recited in claim 25, further comprising an encryption circuit for encrypting said video signals for communication over said AC power-line to said server.

34. An apparatus for monitoring and controlling video surveillance, comprising:

a power-line interface configured for communicating over an AC power-line with remote video imaging devices;

a user interface configured for capturing user preferences for controlling the collection and display of said video streams; and

a computer server configured for allocating bandwidth to remote video imaging devices and receiving video streams subject to said bandwidth allocation over said

power-line interface, said computer server also configured to communicate said video streams for storage and/or display in response to said user preferences.

35. An apparatus as recited in claim 34, wherein said computer server is configured with an internal storage device within which said video streams may be stored.

36. An apparatus as recited in claim 34, further comprising a remote communications interface configured for communicating said video streams from said computer server to a user at a remote location beyond the range of said power-line interface.

37. An apparatus as recited in claim 34, wherein said power-line interface, said user interface and said computer server are integrated within a set-top box, television, or video recording device.

38. An apparatus as recited in claim 34, further comprising a television tuner coupled to said server for the reception of broadcast television, and cable based or satellite base video programming.

39. An apparatus for controlling video surveillance, comprising:  
a power-line interface configured for receiving video data streams from video



imaging devices connected to said power-line interface;

a computer configured for communicating said video data streams to a display device; and

programming executable on said computer for,

interacting with a user for controlling the receipt and display of said video data streams;

controlling the bandwidth of said video data streams generated by said video imaging devices when multiple video imaging devices are active.

40. An apparatus as recited in claim 39, further comprising a data storage unit configured for storing said video data streams received from said video imaging devices.

41. An apparatus as recited in claim 39, wherein said programming for said controlling of said bandwidth of said video data streams comprises:

receiving bandwidth requests within said computer from video imaging devices;

determining a bandwidth allocation based on predetermined, or event driven settings; and

communicating bandwidth controlling commands to said video imaging devices connected over said power-line interface.

42. An apparatus as recited in claim 41, wherein at least one said bandwidth

controlling command controls a parameter selected from the group consisting essentially of color depth, image size, image resolution, and framing rate.

43. A media that is computer readable and includes a computer program which, when executed by a controller for a video device capable of receiving video streams over a power-line communication network and of outputting video streams to a display device, causes the controller to perform the steps comprising:

interacting with a user for controlling the receipt and display of said video data streams;

controlling the bandwidth of said video data streams generated by said video imaging devices; and

communicating selected portions of said video signals from said video device to a display device connected to said video device.

44. A method of providing area surveillance, comprising:

(a) generating video signals in response to video surveillance of one or more areas;

(b) communicating said video signals over an AC power line subject to a dynamic bandwidth allocation;

(c) receiving said video signals within a computer server connected to said AC power line; and

(d) communicating selected portions of said video signals from said computer

server to a display in response to predetermined or event driven criterion.